

WHAT IS CLAIMED IS:

1. An audio processing system for used in a multi-channel audio chip, the audio processing system comprising:

5 a multiplexer for receiving a plurality of digital signals and selectively outputting the digital signals in a time-division manner according to a first control signal;

a digital-to-analog converter for receiving the digital signals in the time-division manner and converting the digital signals into a plurality of analog signals, wherein each of the digital signals is corresponding to one of the analog
10 signals;

a plurality of sample-and-hold circuits for selectively sampling the corresponding analog signals in the time-division manner and holding the corresponding analog signals for a predetermined period of time according to a second control signal, wherein each of the sample-and-hold circuits is
15 corresponding to one of the analog signals;

a plurality of speakers for amplifying the analog signals and outputting the amplified analog signals, wherein each of the speakers is corresponding to one of the analog signals; and

a controller for outputting the first and the second control signals to control
20 operations of the multiplexer and the sample-and-hold circuits.

2. The audio processing system according to claim 1, further comprising a de-multiplexer coupled to the digital-to-analog converter for receiving the

corresponding analog signals and selectively outputting the corresponding analog signals to the sample-and-hold circuits in the time-division manner according to a third control signal.

3. The audio processing system according to claim 2, wherein the second
5 control signal and the third control signal are substantially the same.

4. The audio processing system according to claim 2, wherein the predetermined period of time is determined by the second control signal.